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On October 21, 1976, retired Air Force Lt. Gen. Ira C. Eaker, who commanded both VIII Bomber Command and then Eighth Air Force in 1942-43, and Dr. Arthur G. B. Metcalf, Chairman of the Board of the United States Strategic Institute, met with Albert Speer, Hitler's minister of armaments production, at Mr. Speer's home in Heidelberg. These highlights of their discussion concerning the effects of Allied airpower on German production have been made available to AIR FORCE Magazine by General Eaker and Dr. Metcalf. The insights that were revealed in the conversations are a significant contribution to understanding the development of strategic airpower and its contribution to victory in World War II.

# FATIGUES AND SPEER

BY LT. GEN. IRA C. EAVER, USAF (RET.), AND ARTHUR G. B. METCALF

**EAKER:** Mr. Speer, it seems we worked at cross-purposes in the last war. It was your mission to supply the weapons for the Nazi land, sea, and air forces. It was my job to prevent your accomplishing that by bombing your munitions factories and their supporting systems—oil, ball bearings, power, and transportation.

If I had had a more accurate estimate of your problems, it would have improved our chances of accomplishing our mission.

Now, more than thirty years after Allied bomber operations began in World War II, there is a renewal of interest in airpower operations in that war. One of the major current interests concerns this question: Which hurt you more, the RAF night bombing or the American daylight bombing? Or was the combination, called "round-the-clock bombing," the most effective Allied strategy?

**SPEER:** At first, of course, it was the British night

bombing. We had that to deal with a year before the American daylight raids began, and a year and a half before you made significant attacks with a hundred or more of your daylight bombers.

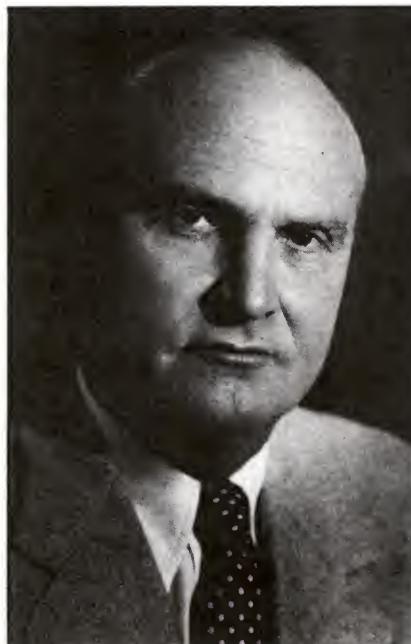
After the British night bombing raids on our industry in the Ruhr, and especially their heavy raids on coastal cities like Bremen and Hamburg, I was directed to concentrate on night-fighter production. Eventually, we began to take heavy toll of the British night bomber force as a result of devising tactics and techniques and developing equipment to deal with the night bombing effort.

I often wondered why the RAF Bomber Command did not continue their thousand-plane raids on our cities. Had they been able to do so, the morale of the German population and the German labor force might have been significantly weakened.

Of course, one reason why the burning of Bremen did not hurt the morale of our people more was because they



Albert Speer



Lt. Gen. Ira C. Eaker, USAF (Ret.)



Dr. Arthur G. B. Metcalf

did not know at the time the full measure of that catastrophe. Hitler's Propaganda Ministry had full control over all communications. Naturally they did not play up bad news. I, myself, did not know the full extent of the fire bombing of Bremen, the horrible loss of civilian life, until much later.

Later on, when American bombers came in daylight in ever-increasing numbers, attacking our munition factories very effectively, our military leaders repeatedly told Hitler that unless the daylight bombers could be stopped, the end of the war was clearly in sight. So I was ordered to concentrate on day-fighter production. For a time we held our own, often causing your raids heavy losses, as at Schweinfurt and Regensburg on August 17, 1943, but eventually you overwhelmed us. So I should suppose that it was the combined air effort that destroyed our means to wage war, and eventually the will and resources to continue.

You will note that in my book *Spandau* [see "Airman's Bookshelf," p. 87] I pointed out that you in fact had started a second front long before you crossed the Channel with ground forces in June 1944. Air Marshal Milch told me that your combined air effort forced us to keep 900,000 men tied down on the so-called "West Wall" to defend against your bombers. This, of course, included the fighter defenses, the antiaircraft artillery people, and the fire fighters, as well as a large number of workmen needed for repairing damaged factories. There was also the large number of artillery pieces required all over Germany because we never knew which of our industrial cities you would attack next. It was your freedom of target choice and our uncertainty that enabled a limited number of bombers to tie down such tremendous numbers of people and equipment in our defense effort.

I suspect that well over a million Germans were ultimately engaged in antiaircraft defenses, as well as 10,000 or more antiaircraft guns. Without this great drain on our manpower, logistics, and weapons, we might well have knocked Russia out of the war before your invasion of France.

**EAKER:** Your view of the bomber offensive as constituting a second front is one I have never seen advanced elsewhere. I know you called it to the attention of Sir Arthur Harris, and he quoted it in an address he delivered last September.

[The summary referred to by Speer appears on page 339 of the English translation of *Spandau, The Secret Diaries*. An excerpt follows:

August 12, 1959. Recently a book was smuggled into my cell, *The Army Air Forces in World War II*, a semiofficial history by Craven and Cate. . . . It seems to me the book misses the decisive point. . . . It places its emphasis on the destruction the air raids inflicted on German industrial potential and thus upon armaments production. . . . The real importance of the air war consisted in the fact that it opened a second front long before the invasion of Europe. That front was the skies over Germany. . . .]

Lt. Gen. Ira C. Eaker, USAF (Ret.), completed pilot training in 1918. Prior to World War II, he served as Executive Assistant to the Chief of the Air Corps and participated as a pilot in many pioneering flights, including the Question Mark endurance flight and the Pan-American flight of 1926. During the war, he commanded successively VIII Bomber Command, Eighth Air Force, and Mediterranean Allied Air Forces. General Eaker flew on the first heavy bombing raid against Occupied Europe and the first shuttle bombing mission to bases in Russia. Retired since 1947, he writes a syndicated column on defense affairs, and has been a frequent contributor to AIR FORCE Magazine.

Dr. Arthur G. B. Metcalf is the Chairman of the Board and President of Electronics Corp. of America, the founder and Chairman of the US Strategic Institute, and Strategic Studies Editor of Strategic Review. A former faculty member at MIT and Harvard, Dr. Metcalf has been a test pilot and was a pioneer in the field of aircraft control and stability. During World War II, he served as a lieutenant colonel. He is the author of many articles in the fields of mathematics, aerodynamics, and strategy and doctrine.

**EAKER:** Which of the target systems—shipbuilding, fighter plane and engine factories, oil, ball bearings, or transportation—was most decisive?

**SPEER:** It was the combination. At first I was most worried about ball bearings. If you had repeated your bombing attacks and destroyed our ball-bearing industry, the war would have been over a year earlier. Your failure to do so enabled us to get bearings from Sweden and other sources and to move our damaged ball-bearing machines to dispersed localities.

**EAKER:** There were several reasons why we did not repeat our attacks on Schweinfurt immediately. In the first place, the strike photos showed great damage. Secondly, we sent out 376 bombers that day against Schweinfurt and Regensburg and lost sixty. No air force can sustain that loss rate. We always tried to hold our operational losses below the programmed number of replacement bombers and crews. I was determined that our bomber force should always be a growing force.

In addition, we had other target systems of high priority, such as aircraft production, oil, transportation, etc. If we had continued all our effort against one of these systems, you would have concentrated your defenses around that system, and our resulting losses would have been unacceptable. Further, we always endeavored to send our daylight bombers against a high-priority target, which was for that particular day free of cloud cover. All these conditions naturally diversified our bombing attacks.

**SPEER:** You are quite right. Ball bearings were not our only critical weapons production system. Your attacks on our petroleum supply, for example, were also decisive in our pilot training program. After your successive raids had severely damaged Romanian oil sources, you followed up by mining the Danube and by constant attacks on locks and barges so that eventually our supply of gasoline and oil from natural sources was greatly diminished. Then you turned, quite logically, to our synthetic oil production. By that time you had such overwhelming air superiority that your long-range fighters were not all required to protect your bombers, but

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began very disastrous attacks on fighter planes on our airdromes.

Your air attacks on our transportation system were also very effective. They not only interfered with transport of troops and their equipment, but also disrupted my weapons production system. We often were producing engines and planes in required numbers, but we could not get them together from our dispersed factory sites. This was particularly true with respect to rail and barge transportation throughout Germany, especially in critical locations like the steelmaking Ruhr, which also supplied coal and coke to other critical industries.

The Allied air attacks on our shipping did much more damage than you apparently realized at the time—not only the destruction of the shipbuilding facilities in our coastal cities, but the attacks on our submarine pens in the occupied Channel ports as well. And, of course, it was your long-range air reconnaissance over the Atlantic sea lanes that eventually reduced our submarine effectiveness and enabled the Americans adequately to supply those vast invasion forces. Sir Arthur Harris undoubtedly was correct in his contention that the so-called Combined Bomber Offensive was critical, perhaps decisive, in the three great campaigns he described: land, sea, and air. [See also "The Three Victories of the Bomber Offensive," December '76 issue.]

**EAKER:** Aside from the bombing of German industry, a very high priority with the Allies was the destruction of the Luftwaffe. Since the Luftwaffe did not show on June 6, 1944, when that great naval armada appeared off the three French invasion beaches, we thought we had positive evidence that our Allied air offensive had largely destroyed the Luftwaffe.

**SPEER:** I think your surmise was essentially correct. I was still turning out the required number of fighter planes, but by that time we were out of experienced pilots. We were so short of fuel that we could give the incoming pilots in our flying schools only 3½ hours flying training per week. These poorly trained and inexperienced Luftwaffe pilots, by that time, were suffering heavy losses. A pilot only survived for a maximum of seven missions against your bombers and their accompanying long-range fighters in 1944 and '45. This was very discouraging to German pilots. It represented an attrition of fourteen percent for each mission. I do remember Hitler had ordered that 1,000 fighters take to the air on the day of the invasion. I do not know the reason for their not showing up. Perhaps General Galland [chief of German fighters] could tell you.

**METCALF:** Do you believe, as some do, that the Luftwaffe was misused?

**SPEER:** Yes, I do. First of all, the performance of our fighters and bombers, which had been developed well before the war, was inferior to your military aircraft.

Hitler insisted that the Me-262, the twin-jet fighter we developed, be converted to a bomber, since Hitler was interested only in *offensive* weapons. It was a great mistake. I believe that as a fighter, it would have offered much more serious opposition to your bombers than the fighters we did use. When we removed the guns, ammunition, and other fighter armament from the Me-262, it was capable of carrying only a single 500-pound bomb, which was hardly worthwhile. Also, the shift of our aircraft industry from the production of bombers to the production of fighters and then back to the production of bombers was a nightmare. This disruption was hardly conducive to producing the aircraft we needed with which to fight the war.

**METCALF:** Was Göring's leadership of the Luftwaffe bad?

**SPEER:** One would have to say yes. After all, he spent most of his time at Karinhall, his country estate, dressed in long, exotic robes, heavily jeweled, etc. As you know, he was on drugs for a time. At the time of the Nuremberg trials Göring was, of course, off the drugs and he had lost a great deal of his excess weight. At that time he behaved like a new person and exhibited many qualities of leadership and clearheadedness. It was quite a surprising transformation.

**METCALF:** Was the German failure to execute the cross-channel invasion of England ("Sea Lion") due to your inability to gain command of the air over Britain?

**SPEER:** Yes. And here again, the need was for a superior fighter capable of knocking down the Royal Air Force, which would have played havoc with our invasion flotilla and our troops on invasion barges during the long passage across the Channel.

**METCALF:** Was it a mistake to interrupt your campaign against the Royal Air Force, whose fighters were having such telling effects on the Luftwaffe during the Battle of Britain, in order to bomb population centers? That shift in strategy gave the RAF a breather—a chance to recover from the systematic attrition of its fighter forces.

**SPEER:** Yes, it was. Here again was seen the influence of Adolf Hitler.

**EAKER:** As I remember, you were charged at the Nuremberg trials with the use and abuse of a so-called slave labor force of some 6,000,000 conquered people.

**SPEER:** The foreign labor force was guarded, housed, fed, and under the general supervision of Himmler. I only made requisitions and was allotted the labor required in our factories. In hindsight, I should have been more concerned about the treatment of this labor force. My factory managers complained about the training

problem resulting from the frequent loss of labor, probably due in part to lack of proper housing, feeding, and care.

This labor force had some distinct limitations. As you probably know, the loss of our code machine, which enabled your Ultra process to intercept [and decode] our radio communications, was due to this labor. There were many factory fires that probably were set by the laborers, and continual reports of sabotage.

How much wiser you were to bring your women into the labor force. Had we done that initially, as you did, it could well have affected the whole course of the war. We would have found out, as you did, that women were equally effective and, for some skills, better than male labor. We never did, despite our hard-pressed munitions production in the late years of the war, make use of this great potential.

**METCALF:** Was foreign labor worth the number of occupation troops you had to use to combat local resistance activities that were heightened by taking those workers out of the countries?

**SPEER:** We had an expression that "Sauckel [Fritz Sauckel, Gauleiter of Thuringia, who was in charge of all foreign labor] was the greatest ally of the French Maquis," whose activities pinned down large numbers of military manpower. On balance, I guess it was not worthwhile. It also was a management problem within our own country to guard these people to prevent sabotage, etc. It was through [Polish workers] that the cryptographic machines for Ultra were handed over to the enemy. No, I don't think the foreign labor program did as much good as it did harm.

**EAKER:** In your book you refer often to the unity of effort of the whole German people behind Hitler and his war effort. Would you anticipate that the people of West Germany would be equally unified under their present government if the Warsaw Pact countries attacked across the NATO line?

**SPEER:** Your premise that the German people were all united behind Hitler I do not believe to be entirely valid. You will recall, there were many attempts to assassinate him. As the dreary war years wound on, there was great disaffection about various phases of his leadership. Undoubtedly Hitler's early successes in the Low Countries and in France gave our people hope that all Germany would again be reunited, that all the territories lost in the First World War would be recovered. Also, as you may remember, we had been suffering great economic depression and deprivation with many people out of work and with the tragic depreciation of the mark. With the Second World War, all that changed, of course. This undoubtedly made a tremendous impression on our people, and I can see where you, on the other side, would get the idea of our united effort.

There was great doubt about the wisdom of attacking Russia. I believe most of our military leaders and knowledgeable civilians doubted the wisdom of fighting

on two fronts. After 1944, we frequently heard of Churchill's remark that Hitler was the Allies' secret weapon, and that was probably true.

I have little doubt that the German people will support their NATO commitment and will fight with their accustomed valor against any invasions of our Homeland. The great difficulty NATO faces, in my judgment, is that it is composed of fourteen separate nations. It must be very difficult to get concerted action and quick decisions from such a conglomerate.

Now I would like to ask some questions about the Allied air effort in World War II. I have often wondered why you began your bombing attacks with such limited forces. Would it not have been better to have waited until you had several hundred, perhaps a thousand, bombers available?

**EAKER:** We did not have that option, for several reasons. After Pearl Harbor, there was great pressure, both at the political level and among the military leaders, to send all our bombers against the Japanese. If we had not begun operations against the Nazis, according to our prewar plan, this Pacific deployment would have taken place. The RAF bomber force would then have been left to deal alone with the Luftwaffe and German weapons production. It was only by demonstrating, as early as possible, that the daylight bombing offensive against Germany was feasible and productive that we were able to sustain our bomber buildup for operations out of Britain, as originally planned.

We learned during those limited early operations how to operate bomber forces under the conditions that then prevailed. If we had waited for the arrival of a thousand bombers before making attacks on German-occupied Europe, it probably would have been a tragic disaster. We learned how to deal with the weather, what kind of training we would have to give our combat crews, what types of formations to fly, and what communications we would require. We also learned that significant changes would be required in our aircraft.

Here is another consideration you may not have taken fully into account. Armies and navies have clashed for centuries, and their battles, strategies, and tactics have been recorded, studied, and analyzed by historians and war colleges of many nations. Prior to World War II, airpower had never had similar experience. Although Lord Trenchard of Britain, General Douhet of Italy, and Gen. William Mitchell of the US had prophesied that strategic airpower could exercise a decisive influence on warfare, those theories had never been tested.

The airplane was less than fifty years old. Flying machines with the power and capacity to test the visions of Trenchard, Douhet, and Mitchell had not been developed. For the first time, the US Eighth Air Force, operating out of Britain, and Britain's own Royal Air Force were to be given the resources to test those theories of the use of strategic airpower.

Gen. H. H. Arnold, head of the US Army Air Forces, was a dedicated Mitchell disciple. His instructions to Gen. Carl Spaatz and to me were clear-cut, specific, unmistakable. We were to take the heavy bombers General Arnold would send us and demonstrate what airpower could do. Could it, as he hoped and believed, exercise a decisive influence on warfare by destroying the weapons-making capacity of an industrial nation like Germany?

General Spaatz was diverted from the test temporarily when he was ordered, in October 1942, to accompany General Eisenhower to Africa to conduct the campaign against Rommel and to seize North Africa. I moved up from leading VIII Bomber Command to be Eighth Air Force Commander. Air Marshal Arthur Harris had been RAF Bomber Commander for six months. This responsibility for the vital test of airpower fell upon us for the next two critical years.

So, during 1942 and '43, this process continued, cooperatively, out of Britain—the RAF by night, the US Eighth Air Force by day.

**SPEER:** Why did you not attack our sources of electrical power upon which our weapon production so largely depended? We were always apprehensive about the vulnerability of our dams, our transformers, and our electric grid, so essential to continued war production.

**EAKER:** Our target planners had suggested electric power as one of the critical Nazi targets. However, the operational people, including myself, pointed out that the bomber was not an effective weapon against electric power production and distribution. We had no bombs available of a size and characteristic needed to destroy your dams, and thus interrupt your water power. Transformers could not be seen at night, or even in daylight from bomber altitudes, and they were much too small to be attacked successfully. The power lines were discernible, but any bomb damage could be quickly repaired, and we realized you undoubtedly had provided for quick repairs of lines and transformers.

You will recall that the British spent a great deal of effort in the development of a bomb large enough to damage your dams. But the work of the dam-busters, though spectacular, did not accomplish decisive results.

As late as the Vietnam War, with the great technical advances that had been made in the meantime, the North Vietnamese powerplants, transformers, and electric grid did not become especially lucrative targets until the smart bombs were available. Of course, with nuclear weapons, power sources of the enemy would be productive, perhaps decisive, targets.

**SPEER:** Why did you not join the British in attacking civilian industrial centers and our labor force?

**EAKER:** Airpower pioneers, including Lord Trenchard, General Douhet, and General Mitchell, had long believed that bombardment aviation might be able to reduce the will of civilian populations to resist. Our own doctrine held that the way to reduce civilian morale was not by killing people, but by depriving them of the resources for further resistance.

The US airpower doctrine, which covered the employment of the Eighth Air Force out of Britain, never contemplated attack on civilian populations, other than that incidental to attacking munition factories. A letter I wrote to General Spaatz in 1943 contained this often-quoted observation: "We must never allow the record of this war to convict us of throwing the strategic bomber at the man in the street."

I do not imply any criticism of the Royal Air Force bomber effort. Their position was entirely different. German planes had brutally attacked London, Coventry, and other cities, inflicting heavy loss of life. When the RAF began to retaliate with the limited resources available, all they could do with their night operations was to hit German industrial areas. As the bomber force grew, they were able, as you have said, to effect considerable destruction of your war effort by bombing German industrialized areas.

**METCALF:** At what time in the war did you feel that the Allied bombing was becoming unbearable to the German people?

**SPEER:** The best answer I can give is that the gradual buildup of your bombing attacks permitted the German people to become accustomed to and fortified against the great increase in destruction. So it is difficult to say at what point the tolerance of the population may have shown signs of being exceeded. Of course, the fire bombing of Hamburg, Dresden, and the like, were great disasters locally. It would have been better if you had been able early in the war to have abruptly increased the size and weight of these bombing raids.

**EAKER:** I believe you have expressed some surprise that there was not closer cooperation between the British night bomber and American daylight operations. It was realized early that the British and American bombers had differing characteristics and limitations and crews with different training and experience. This made it advisable for each to be assigned the distinctive air task that each was best qualified to perform. Occasionally there was close collaboration. The RAF attacked targets we had hit and set afire in daylight, bombing on our fires. We in turn made daylight attacks on installations they had hit at night and which were discernible, even in bad weather, by the fire and smoke.

There was close cooperation in the exchange of target data, operational data, and in logistics and communications. This was necessary with so many planes operational in such a limited airspace as the British Isles. I would not want to leave the impression that there was any lack of mutual support and cooperation. Seldom, if ever, have two national military forces cooperated as effectively as did the RAF and the US Eighth Air Force in the war years. ■